REMARKS

Drawings

The Examiner noted that FIG 2 does not appear in the file. This application was filed under 35 U.S.C 371. A copy of Fig 2 as it appears in the PCT publication, is provided herein.

Specification

A replacement first page is provided herein.

Applicant regrets that due to organizational changes, Applicant is not presently able to provide the information missing from pages 20-21. Applicant will provide said information as soon as it is located.

The Examiner queried the use of dashes to set off a phrase on page 1, lines 23-24. The use is simply Applicant's choice of grammar. However, on the replacement first page applicant has changed the dashes to commas.

Rejections under 35 U.S.C. 101

The Examiner rejected Claims 5 & 6 as reading on naturally occurring cells and polynucleotides. Claim 5 has been amended. However, Applicant traverses with respect to Claim 6. It is not clear to the Applicant how a host cell comprising an expression vector carrying a recombinant gene can be considered to exist in nature. Applicant respectfully requests the withdrawal of the rejection against Claims 5 & 6.

Rejections under 35 U.S.C. 112

The Examiner rejected Claims 1-8, 9, 11, 15 and 17 under 112 paragraph 1. Applicant understands the bulk of the rejection to revolve around the use of the language "having an amino acid sequence of SEQ ID NO:2". The claims have been amended generally to change said phrasing the "having the amino acid sequence of SEQ ID NO:2". Applicant sees these amendments as mooting the bulk of the rejection.

However, in several instances the Examiner has chosen to argue against language from the specification without reference to language in the claims. If language in the claims is unclear, Applicant would appreciate a rejection based on that language. In fact, because the Examiner has chosen to devote most of pages 4 and 5 of the Office Action to discussion of the specification, and has not put forth how the points raised are relevant to the claims, Applicant is at a loss as to how to respond in a cogent manner based on the language of the claims. Finally, the Examiner has cited the cases of Fiers, Amgen and The Regents of the University of California. Applicant believes that each of those cases present issues that are distinct and not raised by the present claims because in this application, SEQ ID NOS: 1&2 are presented.

Therefore, unless the Examiner can redefine the rejection in terms of the language of the claims, Applicant respectfully requests that the rejection be withdrawn.

The Examiner rejected Claims 1-8, 9-11 and 15-17 under 112, paragraph 2. Applicant has amended the claims generally to change the language "having an amino acid sequence" to "having the amino acid sequence". Applicant believes these amendments mot the rejections against Claims 1-8.

Claims 4 and 10 were rejected for lack of antecedent basis. Applicant traverses. Clearly, a polynucleotide of SEQ ID NO:1 is within the genus of polynucleotides recited in Claim 1. Therefore, Claim 1 is seen to provide proper antecedent basis.

Claims 5 & 6 were rejected as not clear. Claim 5 has been amended. Applicant incorporates the above comments regarding Claim 6.

Claims 9-11 and 15-17 were rejected as unclear In the recitation of "relative activity." Applicant traverses. Initially, Applicant reminds the Examiner that he is free to be his own lexicographer and need not use the Examiner's preferred phrasing.

The Examiner raised issues of "providing a standard for ascertaining the requisite degree", "the candidate compound not being defined, the relative activity of the polypeptide can not be determined" and the fact that

"the candidate compound is free to interact with any component of the cells" as reasons why the invention is not distinctly claimed.

Applicant contends that those of skill in the art, in view of the teachings of this specification, would clearly be able to comprehend the concept of "relative activity" and conduct the assays as claimed. As support for Applicant's contention Applicant notes that it is common practice to run control assays, that is, assays in which the compound to be tested is not present. The control serves as a relative assessment of the measured activity, a baseline.

In view of Applicant's amendments and comments presented herein, Applicant respectfully requests that the stated rejections be withdrawn.

Rejection under 35 U.S.C. 102

The Examiner rejected Claims 1-6 and 8 as anticipated by Eveland and Claims 15 & 17 as anticipated by Chabin in view of Eveland. Applicant has amended the claims. In view of Applicant's amendments, it is respectfully requested that the stated rejections be withdrawn.

The Examiner rejected Claims 1-2 as anticipated by WO98/03533. Applicant has amended the claims. In view of Applicant's amendments, it is respectfully requested that the stated rejections be withdrawn.

The Examiner rejected Claims 1-8, 9, 11, 15 & 17 as anticipated by EP0889123 A2. Applicant has amended the claims. In view of Applicant's amendments, it is respectfully requested that the stated rejections be withdrawn.

CONDITIONAL PETITION

Applicant hereby makes a Conditional Petition for any relief available to correct any defect in connection with this filing, or any defect remaining in this application after this filing. The Commissioner is authorized to charge deposit account 13-2755 for the petition fee and any other fee(s) required to effect this Conditional Petition.

Respectfully submitted,

By _____

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Date: October 27, 2003

TITLE OF THE INVENTION

MURC GENE AND ENZYME OF *PSEUDOMONAS AERUGINOSA*

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application No. 60/154,073, filed September 14, 1999, and is a National Stage Filing of PCT/US00/24845, having an International Filing Date of September 11, 2000, the contents of which are incorporated herein by reference in their entirety.

~~STATEMENT REGARDING FEDERALLY SPONSORED R&D~~

~~Not applicable.~~

~~REFERENCE TO MICROFICHE APPENDIX~~

~~Not applicable.~~

FIELD OF THE INVENTION

This invention relates to the genes and enzymes involved in cell wall synthesis in bacteria, and particularly to the inhibition of such enzymes.

BACKGROUND OF THE INVENTION

The emegence of mluti-drug resistant bacteria has led to an increased demand for new antibiotics with new modes of action. The biosynthetic pathway of the bacterial cell wall contains several attractive targets. Some of the enzymes in that pathway are proven targets for antibiotics such as β-lactams and glycopeptides antibiotics.

The bacterial cell wall is a polymer[[--]] - a single molecule composed of peptidoglycan[[--]] - that defines the boundary and shape of the cell. Assembled by crosslinking glycan chains with short peptide bridges (Rogers, H. J., H. R. Perkins, and J. B. Ward, 1980, Biosynthesis of peptidoglycan. p. 239-297. In Microbial cell walls and membranes. Chapman & Hall Ltd. London), the completed structure is strong enough to maintain cell integrity against an osmotic pressure differential of over four atmospheres, but also flexible enough to allow the cell to move, grow and divide.

The construction of the peptidoglycan begins in the cytoplasm with an activated sugar molecule, UDP-N-acetylglucosamine. After two reactions (catalyzed by MurA and MurB) that result in the placement of a lactyl group on the 3-OH of the

FIG. 2